

**Eastman Tenox(TM) R Food-Grade
Antioxidant, Kosher**

Version	Revision Date:	SDS Number:	Date of last issue: 01/11/2018
2.2	09/24/2018	150000001355	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

SECTION 1. IDENTIFICATION

Product name : Eastman Tenox(TM) R Food-Grade Antioxidant, Kosher

Product code : 01777-00, P0177700, P0177703, P0177704, P0177705,
P0177708, P0177710

Manufacturer or supplier's details

Company name of supplier : Eastman Chemical Company

Address : 200 South Wilcox Drive
Kingsport TN 37660-5280

Telephone : (423) 229-2000

Emergency telephone : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use

Recommended use : antioxidant (food grade)

Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Skin irritation : Category 2

Eye irritation : Category 2A

Specific target organ
systemic toxicity - single
exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary Statements : **Prevention:**

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P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients**

Chemical name	CAS-No.	Concentration (% w/w)
propylene glycol	57-55-6	60
butylated hydroxyanisole	25013-16-5	20
citric acid	77-92-9	20

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Treat symptomatically.
If symptoms persist, call a physician.

In case of skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Wash contaminated clothing before re-use.
Get medical attention.
Thoroughly clean shoes before reuse.

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In case of eye contact	:	Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.
If swallowed	:	Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Carbon dioxide (CO2) Dry chemical Water spray
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during fire fighting	:	None known.
Hazardous combustion products	:	No hazardous combustion products are known
Further information	:	None known.
Special protective equipment for fire-fighters	:	Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Wear appropriate personal protective equipment. Local authorities should be advised if significant spillages cannot be contained.
Environmental precautions	:	Avoid release to the environment.
Methods and materials for containment and cleaning up	:	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	None known.
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Advice on safe handling : Avoid inhalation of vapor or mist.
Do not get in eyes.
Avoid contact with skin, eyes and clothing.
Do not swallow.
Ensure adequate ventilation.
Wash thoroughly after handling.

Conditions for safe storage : Store locked up.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propylene glycol	57-55-6	TWA	10 mg/m3	US WEEL

Engineering measures : Ensure adequate ventilation.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Hand protection

Remarks : Wear suitable gloves.

Eye protection : Wear safety glasses with side shields (or goggles).
Face-shield
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Protective measures : Remove respiratory and skin/eye protection only after vapors have been cleared from the area.
Ensure that eye flushing systems and safety showers are located close to the working place.
Use personal protective equipment as required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous liquid

Color : light yellow

Odor : slight

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Odor Threshold	:	not determined
pH	:	not determined
Melting point/range	:	not determined
Boiling point/boiling range	:	383 °F / 195 °C
Flash point	:	235 °F / 113 °C
		Method: Pensky-Martens closed cup
Evaporation rate	:	not determined
Self-ignition	:	795 °F / 424 °C
		Method: ASTM D2155
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapor pressure	:	not determined
Relative vapor density	:	not determined
Relative density	:	1.117 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	appreciable
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	not determined
Decomposition temperature	:	Thermal stability not tested. Low stability hazard expected at normal operating temperatures.
Viscosity		
Viscosity, dynamic	:	229 mPa.s (77 °F / 25 °C)
Viscosity, kinematic	:	205.01 mm ² /s (77 °F / 25 °C)
Explosive properties	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

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Reactivity	:	None reasonably foreseeable.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable
Conditions to avoid	:	None known.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Carbon dioxide (CO2) Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Not classified based on available information.

Product:

Acute oral toxicity	:	Remarks: No data available
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available

Ingredients:**propylene glycol:**

Acute oral toxicity	:	LD50 Oral (Rat): 22,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 317 mg/l Exposure time: 2 h Remarks: (highest concentration tested)
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 2,000 mg/kg

butylated hydroxyanisole:

Acute oral toxicity	:	LD50 Oral (Rat): 1,600 - 3,200 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 2,000 mg/kg

citric acid:

Acute oral toxicity	:	LD50 Oral (Rat): 2,263 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rat): > 2,000 mg/kg

Skin corrosion/irritation

Causes skin irritation.

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Product:

Remarks : No data available

Ingredients:**propylene glycol:**

Species	: Rabbit
Exposure time	: 24 h
Result	: none

butylated hydroxyanisole:

Species	: Guinea pig
Exposure time	: 24 h
Result	: slight

citric acid:

Species	: Rabbit
Exposure time	: 24 h
Result	: slight

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks : No data available

Ingredients:**propylene glycol:**

Species	: Rabbit
Result	: very slight

butylated hydroxyanisole:

Result : Irritating to eyes.

citric acid:

Species	: Rabbit
Result	: moderate to strong
Exposure time	: 24 h

Respiratory or skin sensitization**Skin sensitization**

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

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Product:

Remarks : No data available

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Product:

Remarks : This information is not available.

IARCGroup 2B: Possibly carcinogenic to humans
butylated hydroxyanisole 25013-16-5**OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTPReasonably anticipated to be a human carcinogen
butylated hydroxyanisole 25013-16-5**Reproductive toxicity**

Not classified based on available information.

Product:

Effects on fertility : Remarks: No data available

STOT-single exposure

May cause respiratory irritation.

Product:

Remarks : No data available

Ingredients:**citric acid:**Routes of exposure : Inhalation
Target Organs : respiratory tract irritation**STOT-repeated exposure**

Not classified based on available information.

Product:

Remarks : No data available

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

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Information on likely routes of exposure**Product:**

Inhalation	:	Remarks: May cause respiratory irritation.
Skin contact	:	Remarks: Causes skin irritation.
Eye contact	:	Remarks: Causes serious eye irritation.
Ingestion	:	Remarks: None known.

Further information**Product:**

Remarks	:	Contains butylated hydroxyanisole(BHA). Rats, mice, and hamsters given high levels (1 and 2%) of BHA in their food have developed malignant tumors (cancer) of the forestomach. No excess incidence of benign or malignant tumors was seen in animals fed BHA at levels below 0.5%. In experimental feeding studies, the forestomach of rodents is almost continuously full of food. The continuous presence of food containing BHA causes prolonged irritation that leads to inflammation, necrosis (death of tissue cells), and ulceration. It is thought that this continuous tissue damage is responsible for producing the cancers. No inflammation or cancers were seen in the true (glandular) stomach of these rodents, even after prolonged feeding, nor were they seen in animals which do not have forestomachs (guinea pigs, dogs, and monkeys) fed BHA in the diet at levels around 1%. Since the stomach of humans is similar in structure to the glandular stomach of rodents and to the stomachs of dogs, monkeys, and guinea pigs, it is likely that BHA does not present a significant risk of cancer to humans exposed to BHA at levels typical of occupational exposures or consumer use.
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Ingredients:**butylated hydroxyanisole:**

Remarks	:	Contains butylated hydroxyanisole(BHA). Rats, mice, and hamsters given high levels (1 and 2%) of BHA in their food have developed malignant tumors (cancer) of the forestomach. No excess incidence of benign or malignant tumors was seen in animals fed BHA at levels below 0.5%. In experimental feeding studies, the forestomach of rodents is almost continuously full of food. The continuous presence of food containing BHA causes prolonged irritation that leads to inflammation, necrosis (death of tissue cells), and ulceration. It is thought that this continuous tissue damage is responsible for producing the cancers. No inflammation or cancers were seen in the true (glandular) stomach of these rodents, even
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after prolonged feeding, nor were they seen in animals which do not have forestomachs (guinea pigs, dogs, and monkeys) fed BHA in the diet at levels around 1%. Since the stomach of humans is similar in structure to the glandular stomach of rodents and to the stomachs of dogs, monkeys, and guinea pigs, it is likely that BHA does not present a significant risk of cancer to humans exposed to BHA at levels typical of occupational exposures or consumer use.

Prolonged or repeated exposure to smoke or fumes generated by heating this product may cause respiratory sensitization.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Ingredients:****propylene glycol:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Chlorella pyrenoidosa): 19,300 mg/l Exposure time: 72 h Test Type: Growth inhibition

citric acid:

Toxicity to fish	:	LC50 (Fish): 440 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (daphnid): 1,535 mg/l Exposure time: 24 h

Persistence and degradability**Ingredients:****propylene glycol:**

Biodegradability	:	Concentration: 100 mg/l Result: Readily biodegradable. Biodegradation: 81.7 % Exposure time: 28 d Method: Ready Biodegradability: CO2 Evolution Test
Biochemical Oxygen Demand (BOD)	:	BOD-5: 1,080 mg/g BOD-20: 1,225 mg/g

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Chemical Oxygen Demand (COD) : 1,630 mg/g

ThOD : 1,680 mg/g

citric acid:

Biodegradability : Concentration: 10 mg/l
Result: Readily biodegradable.
Biodegradation: 97 %
Exposure time: 28 d
Method: Ready Biodegradability: CO2 Evolution Test

Bioaccumulative potential**Ingredients:****propylene glycol:**

Partition coefficient: n-octanol/water : Pow: 0.12
log Pow: -0.92

citric acid:

Bioaccumulation : Remarks: Does not bioaccumulate.

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

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Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Ingredients	CAS-No.	Component TPQ (lbs)
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SARA 311/312 Hazards : Acute Health Hazard**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**California Prop. 65**

WARNING: This product can expose you to chemicals including butylated hydroxyanisole, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

The ingredients of this product are reported in the following inventories:

CH INV	: On the inventory, or in compliance with the inventory
DSL	: On the inventory, or in compliance with the inventory
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
ISHL	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: On the inventory, or in compliance with the inventory

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TSCA list

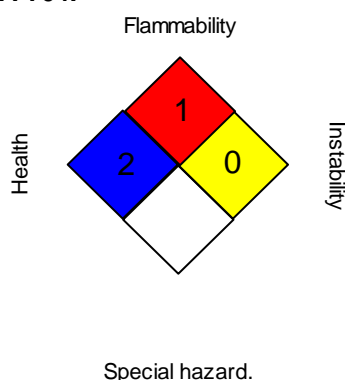
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH	/	2
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
 US WEEL / TWA : 8-hr TWA

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable

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Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 09/24/2018

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8